REMARKS

Claims 1, 2, 7, 10-14, 16, 18-26, 28, 29, 31-34 are canceled herein without prejudice with applicants reserving all rights therein to file continuing applications to solicit the subject matter originally set forth in these claims.

New method claims 36-50 are entered with claims 36 and 43 being independent claims. Claims 37-42 depend, in one way or another from independent claim 36. Dependent claims 44-50 depend, in one way or another, from independent claim 43.

No new matter has been inserted by addition of these claims. A support chart showing non-exhaustive, exemplary support for the new claims is set forth herein below.

Support Chart

(Exemplary Support)

New Claim	Support
36 independent	original claim 18; paragraph **[0030]**
37 dependent	original claim 19
38 dependent	original claim 20
39 dependent	original claim 21; paragraph **[0025]**
40 dependent	original claim 22
41 dependent	original claim 23
42 dependent	original claim 25
43 independent	original claim 26; paragraph **[0030]**
44 dependent	original claim 26; subportion (c); paragraph **[0027]**
45 dependent	paragraph **[0030]**
46 dependent	paragraph **[0027]**
47 dependent	original claim 22
48 dependent	original claim 23

49 dependent	original claim 25
50 dependent	paragraphs **[0006]**, **[0009]**

Independent claim 36 is directed toward a method of making a generally pot-shaped sputter target having a first region that defines a planar end wall or dome and a second region defining a sidewall connected to and extending from the first region to form an open end of the sputter target. A method of forming different crystallographic orientations in the first and second regions is provided. This method comprises providing a hydroforming press having a platen, a housing holding a fluid filled bladder, and a mandrel. A metallic blank having a given crystallographic orientation is placed in the press. The blank has a first region thereof that, as a result of the forming, will define the first region of the target. The blank also has a second region that, as a result of the forming process, will define the second region of the target. Relative movement is provided between the mandrel and the bladder to press the blank therebetween. The pressing is continued, and the blank is cold worked in the second region of the blank to thereby deform the second region of the blank at a working deformation of about 35% or greater. When the blank is released from the press, a sputter target is thereby provided wherein the second region of the target has a crystallographic orientation that is different from the given crystallographic orientation of the blank and from the crystallographic orientation of the first target region.

The inventors have found that it is desirable to impart differing crystallographic orientations to different sputter target regions to thereby enhance sputtering performance. For example, in a pot-shaped or hollow cathode target, it is desirable to have different crystallographic orientations along the sidewalls and along the planar dome-shaped region of the target. In this way, and as stated in paragraph **[0009]** of the specification, the different orientations in the dome and sidewalls emit sputter materials at different angles from the respective dome and sidewall portions of the target surface. These differing angles of emission affect the uniformity and density of depositions of the sputtered material on the desired substrate.

In a preferred embodiment, and as made the subject of dependent claims 41-42, a tantalum target is provided wherein the first target surface is provided with a crystallographic orientation of a mixed {111}/{100} and wherein the second region has a mixed crystallographic orientation of {112}/{110}.

Independent claim 43 is directed toward a method of forming a sputter target with first and second sputtering surfaces thereof with the first sputtering surface having a first crystallographic orientation, and the second sputtering surface having a second crystallographic orientation. A metallic blank having the first crystallographic orientation throughout is provided. This blank has a first region thereof that, after the forming, will define the first sputtering surface of the target. The blank further has a second region that, after the forming step, will define the second sputtering surface of the target. The second region of the blank is cold worked while the blank is pressed into a desired shape. The cold working deforms the second region of the blank to a work deformation of about 35% or greater. Accordingly, a sputter target is formed wherein the first sputtering surface has the first crystallographic orientation and the second surface has a second crystallographic orientation. As is made the subject of dependent claim 44, the method is devoid of any heat treatment annealing so that the second region of the blank does not recrystallize. Further, in another embodiment, as is set forth in claims 48-49, tantalum is selected as the metal, and the first crystallographic orientation of the blank is mixed {111}/{100}, and cold working of the second region of the blank imparts a mixed crystallographic orientation of {112}/{110} to the second region.

All claims stand rejected on art-based grounds. Specifically, the Examiner has relied upon Ford et al. '356, Kulkarni et al. '357, and Rhoades et al. '068, with the rejection of certain of the then existing claims being predicated on Ford '356 singly.

Turning first to the Ford et al. '356 patent, there is no hint or suggestion in this reference directed toward the desirability of providing a target having two different sputtering surface regions wherein each of the regions has a different crystallographic orientation as set forth in all claims at bar. Further, the '356 contains no hint or suggestion as to the hydroforming requirement

of claim 36 and all claims depending therefrom, and the emphasis on annealing such as is set forth in column 7, line 40 of the '356 dictates against the performance of a method which is devoid of any heat treatment annealing such as is set forth in dependent claim 44 at bar.

The '068 Rhoades et al. patent pertains to a process and apparatus in which a sheet material is formed by drawing it into a die cavity using the flow of a viscous thermoplastic polymer medium extruded against the sheet. This '068 reference is not at all suggestive of a method of making a sputter target and is certainly not directed toward any method by which different crystallographic orientations can be imparted to different regions of a sputter target.

To the sure, the Kulkarni et al., '357 teaches a sputter target composed of aluminum and which may be formed via hydroforming. However, and with regard to the independent claims at bar, Kulkarni et al. '357 is devoid of any teaching or suggestion as to the desirable, and claimed provision of different regions on a sputtering target wherein those regions have different crystallographic orientations.

For all of the above reasons, it is respectfully submitted that the claims define patentable subject matter. The issuance of a Notice of Allowance is accordingly solicited.

The Examiner is invited to call the undersigned attorney if, during the course of reconsideration of this application, any question or comment should arise.

Respectfully submitted,

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